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Ivan S. Kavrukov, Esq.
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER	
WOODS, ERIC V	

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2672	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,111	ISHIHARA, HIROSHI	
	Examiner	Art Unit	
	Eric V Woods	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11152004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: pg. 2, lines 6-7: " ... when it is determined that rendering of data may not be further developed at a predetermined interval..." where it is unclear what data is being rendered, why it may not be further developed, and what the significance of the interval is; pg. 4, lines 9-10: " ... deletes a specified portion in which the specified portion of the first original image is deleted..." where it is unclear what portion is actually deleted, which portion of the which image is referred to as 'a specified portion'; the terms "run aggregate figure", "run aggregate data", etc. is used repeatedly throughout the specification, where it unclear what is encompassed by that term [that is, a partial, incomplete explanation of what a "run aggregate" or a "data run aggregate" is not made until pg. 33 when the first mention of such was on pg. 4]; etc.

3. The disclosure is objected to under 35 U.S.C. 112, first paragraph, as being non-enabling. There are several terms used in the specification, all of which involve

"aggregate", e.g. "run aggregate figure", "run aggregate data", etc., none of which are clearly defined at any given point. Consequently, one of ordinary skill in the art would not know how to make and/or use the invention.

3. The "Summary" section is longer than the "Detailed Description" section. It appears that applicant has repeated the same page or two of description and merely changed the words "image processing method" to "printing apparatus" to "novel host PC". There is no new content disclosed in the latter two blocks of information in the summary. Examiner recommends combining this information into one section and removing all redundant information.

4. The specification is objected to because the acronym "PDL" is never specified to be an acronym for "page description language" although this is clearly applicant's intent.

5. The specification is objected to because applicant is using the term "overlay" incorrectly; the correct term is "overlap". An overlay is something applied to or spread over or on a surface, whereas an overlap is when two objects have an area or range in common, which is clearly what applicant's invention is directed to. Several searches of related art reveal that common terminology in the art is in fact "overlap", where the term "overlay" is used only in conjunction with registration and alignment applications associated with lithography, computer vision, etc.

6. The specification is objected to because in the "brief list of figures" section, multiple figures are not listed. Figures 3 and 5-7 all contain multiple figures that are not listed in that section. Figures 3A-3C, 5A-5C, 6A-6C, and 7A-7D are not listed. Appropriate correction is required.

7. The specification is objected to because the bus element shown in Fig. 1 is not mentioned in the drawing or the specification, and so represents an omission of an essential element. Also, the connections between the bus element and the other elements are not made clear in either the drawings or the specification – that is, whether the connections are through the bus or not, or bypass it.

8. The specification is objected to because steps 404S and 406S [pg. 26 in specification (probably intended to be S404 and S406)] are not shown in the drawings.

9. A substitute specification without the claims is required pursuant to 37 CFR 1.125(a) because the specification is replete with grammatical errors and appears to be a direct translation into English of a foreign document. [Example: misspelling of 'overlay' as 'overly' in multiple locations, which completely changes the meaning (pg. 10, line 11; pg. 13, line 3, and multiple other locations; "renders divided rectangle" (pg. 26, line 22) – the article adjective is missing, e.g. it should read "renders a divided rectangle or "renders the divided rectangle"; pg. 32, line 25, terms "are first figure" are used, where the correct usage would "are the first figure" or "are a first figure"; etc.]

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed

within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

10. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

11. The drawings are objected to because the bus element in Figs. 1 and 2 is not labeled. There is obviously a bus that the CPU element is connected to; this element is an essential element to understanding the functioning of the device, and so must be labeled. Also, it is not clear whether the "graphic overlay detection unit" 11 and the "immediately preceding graphic data memory" 21 are both connected to the bus, to each other, or both. Also, it is not clear whether connections between elements 20 and 11 and element 12 and 23 are through the bus or not, as the connection between elements 10 and 20 is clearly not through the bus and is shown passing through it, whereas in the other drawings it is not.

12. The drawings are objected to because in Fig. 4, the term "precedently" is used, where the correct word would be "previous" or possibly "preceding." "Precedently" is not an appropriate term here, as the meaning carries a different connotation (it has meaning a legal sense, but not in standard, idiomatic English).

13. The drawings are objected to because in Fig. 4, element / step S410 is labeled "Change Division Coordinate of Precedently Adjacent Rectangle." In addition to the objection concerning the use of the word "precedently," the terms "change division coordinate" are not accurate or descriptive. Examiner suggests relabeling step S410 as "Change Coordinates of Divided Previous Adjacent Rectangle" or similar.

14. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 404S and 406S [pg. 26 in specification (probably intended to be S404 and S406)].

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

15. Claims 1, 10, 19, 28, 37, and 46 are objected to because of the following informalities: there is no comma on line 15, which should read: "image, said image processing apparatus comprising: "; line 16 should begin with the term "an"; the terms

"to perform an overly detection" on lines 16-17 are unnecessary and redundant, as "overlay detector configured ... to detect an overlay ..." would be just as clear. Appropriate correction is required.

16. Claims 1-54 are objected to because of the following informalities: applicant is using the term "overlay" incorrectly; the correct term is "overlap". An overlay is something applied to or spread over or on a surface, whereas an overlap is when two objects have an area or range in common, which is clearly what applicant's invention is directed to (American Heritage College Dictionary). See further notes in the specification objection based on this particular problem.

17. Claims 4, 13, 22, 31, 40, and 49 are objected to because of the following informalities: the terms "at least one of rectangle figure and run aggregate figure" are used. The correct terminology would be "at least one of a rectangular figure and a run aggregate figure."

18. Claims 6, 15, 24, 33, 42, and 51 are objected to because of the following informalities: the term "overly" is used, but it is a misspelled version of "overlay".

19. Claims 7, 16, 25, 34, 43, and 52 are objected to because of the following informality: the terms "by each run" are used. This preposition makes no sense – the correct (and probably intended) meaning would be "for each run."

Claim Rejections - 35 USC § 112

20. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

21. Claims 4-7, 13-16, 22-25, 31-34, 40-43, and 49-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. That is, the term "run aggregate figure" is not clearly defined anywhere in the specification, and has no art-accepted meaning. As such, the disclosure is not enabling and thus neither is any claims that incorporate this term.

22. Claims 5-6, 14-15, 23-24, 32-33, 41-42, and 50-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. That is, the claims recite, "the overlay detector [step, means, etc] configured ..." where the specification does not support this limitation. That is, the specification teaches that the overlay detection should work for all of the above kinds of figures without a specific need for configuration.

23. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

24. Claims 1, 4-7, 10, 13-16, 19, 22-25, 28, 31-34, 37, 40-43, 46, and 49-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 10, 19, 28, 37, and 46 recite the limitation "the second graphical rendering data" in line 5, pg. 40 of the specification (last portion. There is insufficient

antecedent basis for this limitation in the claim. That is, there are a first and a second rendering data disclosed, but there are not 'graphical rendering data' disclosed. Therefore, it is impossible to know what data is meant.

Claims 4-7, 13-16, 22-25, 31-34, 40-43, and 49-52 are rejected as being indefinite for failing to define "run aggregate figure." As such, the subject matter being claimed is not clear.

Claims 5 and 6 recite the limitation "the overlay detection means" in the second line. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 is rejected for deficiencies in the parent claim (e.g. the lack of antecedent basis problems with claim 6).

Claims 7, 16, 25, 34, 43, and 52 recite the limitation "each run" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

28. **Please note: examiner is interpreting the term "run aggregate figure" as used in the claims in light of the specification and Figs. 6A-6C; that is, since applicant describes printing and page description languages, the term "run aggregate figure" is taken to mean blocks of text, characters, images, or similar.

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

30. Claims 1, 3-10, 12-19, 20-28, 30-37, 39-46, and 48-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venable (US PGPub 2003/0152272 A1)('Venable') in view of Duluk, Jr. et al (US 6,597,363 B1)('Duluk').

[Claim 10 [and all subsequent claims, e.g. 10-54 having the words "means" in them] is a substantial duplicate of claim 1, the only difference being that the word 'means' is added one time. The means in question – overlay detecting means – is that specified by Venable. Reference Venable teaches the use of rectangles to detect overlap, as shown in Fig. 14. Further, Venable teaches the use of bounding rectangles to enclose other polygons in Fig. 13 and 0088, which would *prima facie* enclose text and similar and teaches processing of rectangular figures in 0073, and further states that the methods can be applied to polygons having any other shape, including circular or elliptical ones, which would most certainly encompass the "run aggregate figures" of applicant. The "run aggregate figures" shown in applicant's Figs. 6A-6C would be equivalent to lines of text that are encapsulated by bounding boxes and then processed together. As such, any means for detected overlap of rectangular features would *prima facie* be effective for analyzing stacks of rectangular figures. The "means" recited by applicant would correspond to the rectangular overlap detection method shown in Venable Fig. 14 (comparable to applicant's Figs. 5A-5C, for example). Thusly, the overlay detecting means taught by Venable corresponds with that of the applicant.]

[Further, for all claims that are dependent on claim 10 (e.g. 11-18) please note that the above discussion on 'means' applies to those claims as well, so that limitation will not be addressed, as those claims are all exact duplicates of those of claims 1-9.]

[Claim 19 is a duplicate of claim 1 with the word "method" substituted for apparatus. Claim 28 is a duplicate of claim 1 with the word "printing" substituted for "image processing." Claim 37 is a duplicate of claim 1 with the words "host PC" substituted for "image processing apparatus." Claim 46 is a duplicate of claim 1 with the word "forming" substituted for "processing". These substitutions do NOT change the scope of the claims and so the same rejections that are valid on claim 1 and the dependent claims therein are equally valid, with no further comment, on these claims. Finally, Venable 0026 shows a printing system (applicant's claim 28), Venable (see Venable claims 1-8) claims a method (applicant's claim 19), and Venable 0060 and 0057 teach that a general purpose computer can be an image input device and the device shown has a general purpose computer or data processing unit on it [so it would be obvious that, under certain circumstances, these elements could be combined; a general purpose computer would also be an image forming apparatus] (applicant's claim 37 and 46).]

As to claims 1, 10, 19, 28, 37, and 46,

An image processing apparatus which sequentially processes graphic rendering instructions for image data, said graphic rendering instructions including first and second graphic rendering instructions, said first graphic rendering instruction being input immediately preceding said second graphic rendering instruction, said first graphic rendering instruction containing first rendering data representing a first original image to render a first output image, said second graphic rendering instruction containing second rendering data representing a second original image to render a second output image,

said first original image being overlaid by said second original image, said image processing apparatus comprising: (Venable 0012-0017, that is, referring to the method claim; 0049, definition of an item of data, which clearly meets the recited "containing first rendering data representing a first original image", 0052 and 0056 for more definitions, e.g. definition of image processing and of a version of an image, which is defined to be a second image produced using an item of data of the first image processed in some way. Further, in 0060-0061 it is disclosed that a printer may contain all the components shown in Fig. 2, which roughly correspond to applicant's Fig. 1, insofar as it contains memory and a CPU as claimed by applicant. Further, as applicant discusses in the specification, 0005 and 0061 disclose that objects and data to be rendered can be text, images, graphics, structured image documents, and files with multiple layers, e.g. 0062 – it can be a page description language.)(Duluk discloses sequential processing of primitive groups in Fig. 15 for the shown pipeline – see 25:45-55, 26:14-20. Further, as illustrated in Fig. 24, images are processed as they overlap. Further, dynamic microcode generation is performed where the data and instructions are both fed into the pipeline sequentially 38:15-55.)

Overlay detector configured to perform an overlay detection to detect an overlay of the first and second original images which are rendered based on the first and second rendering data by the first and second rendering instructions, respectively; and (Venable Fig. 14, processes disclosed in 0015 and 0021, would be rendered as disclosed in 0005 and 0061. These processes would inherently require an "overlay detector" as recited by applicant; anything that performs overlap detection fulfills this

requirement. Further, Fig. 5 illustrates how 'background' and 'foreground' regions are identified, where these are the areas from the first and second images respectively. Turning to Duluk, obviously overlap detection is done on a per-fragment basis for rendering.)

A memory storing the first rendering data contained in the first graphic rendering instruction, wherein the overlay detector specifies a portion of the first original image to be overlaid by the second original image upon detecting an overlay of the first and second original images, deletes a specified portion and draws a third output image, based on the original images, in which the specified portion of the first original image is deleted and stores the second graphic rendering data into the memory (Venable Fig. 2 shows a general category block labeled 'memory' that contains both ROM and RAM which meets the recited 'memory'. As shown in Venable Fig. 5, the 'non-imagery' regions are eliminated (step 126), which corresponds to the "specified portion" recited by applicant above. Furthermore, as shown in Fig. 12, a bounding rectangle is formed around polygons and items for overlap analysis. Turning back to 0015-0018, very clearly the first two images are input and the third image is output with the 'specified region' removed. Given that the memory shown in Fig. 2 is the only memory shown, it is inherent in the operation of a digital computer (CPU) that it requires memory, and thus would use the memory shown, thus fulfilling the recited limitations of claim 1. Further, all such images would be loaded into this memory for processing. Also, see 0005 and 0061 for rendering limitation. Images are stored in the memory in 0060-0061. Turning now to Duluk, several memories are shown in Fig. 15, and the sort memory

uses paging techniques (26:15-21). The 'intermediate memory' shown in applicant's Fig. 1 embodiment would correspond to the frame buffer (element 17000) in Fig. 15, or various other memory elements shown. Further, fragments are stored after compositing and overlap / hidden surface removal in the frame buffer of Duluk before they are displayed or written to the output device.)

Reference Venable discloses all the limitations of the claim except explicitly specifying sequential processing of images and the storing of the third image to memory. Reference Duluk teaches sequential processing of instructions containing image data and rendering instructions, particularly in 38:15-55, where dynamic microcode generation for each fragment is disclosed (e.g. instructions for processing each fragment are sent along with each fragment, thus forming the first and second graphic rendering instructions and rendering data claimed by applicant). Also, It would have been obvious (because the technique is well-known in the art) to one having ordinary skill in the art at the time the invention was made to process instructions sequentially, as conventional rendering apparatuses process instructions in this manner. Further, it is well known in the art to store the results of image processing in some kind of memory before they are output (e.g. a frame buffer – see Duluk). Duluk establishes sending rendering data into the pipeline with instructions in the discussion on dynamic microcode generation. Reference Venable teaches in 0063 that images are stored in a frame buffer, so it would be *prima facie* obvious to store the third image there. Finally, it would have been obvious to one of ordinary skill in the art to put the second instruction (or image or data) into the system (rendering engine, interpreter,

entity, etc.) immediately after the first instruction, as they would be processed together (see Duluk for notes on how vertices are fed into the pipeline in the Background and Generic Pipeline sections).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the overlap removal techniques of Venable and the rendering techniques of Duluk, since the techniques of Duluk (3:10-16, 5:39-60, 6:30-65, as applied to OpenGL standard, which handles both 2D and 3D applications – see Venable 0005 where it is taught that images are rasterized for rendering processing and Duluk 1:18-50 as well) are taught to speed up conventional rendering processes like those used in Venable.

As to claims 3, 12, 21, 30, 39, and 48,

The image processing apparatus as defined in claim 1, wherein said graphic rendering instructions are configured to be converted into at least one of intermediate data represented by coordinate information and a PDL language. (Reference Venable teaches the use of a PDL as output from the processing performed in 0062, which fulfills all the recited limitations of the claim. Since only the primary reference is utilized, no separate combination or motivation is required (which fulfills the "at least one of" limitation recited above. The motivation and combination of the rejection for the parent claim is herein incorporated by reference.)

As to claims 4, 13, 22, 31, 40, and 49,

The image processing apparatus as defined in claim 1, wherein each of the first and second original images is configured to include at least one of rectangle figure and run

aggregate figure. (Reference Venable teaches in Fig. 14 the use of bounded rectangular regions for image processing as claimed by applicant. Further, since Venable teaches in 0026 that Fig. 1 is an embodiment of a printing system, it would be *prima facie* obvious that input data from a scanner (Fig. 3) or printer as taught by Venable would contain words, text, and images, of which at least the text would be rectangular and thus meet the "run aggregate figure" limitation. Venable teaches the use of rectangles in 0010, and the use of known prepress techniques in 0011, which include PDLs as disclosed in 0061, so PDLs could be used as the input as well. Further, since images are scanned based on a pixel-by-pixel basis, there would be rectangular elements in any first or second image. The platen of the scanner shown in Fig. 3 is rectangular anyway, so the outer perimeter would be rectangular *prima facie*. Finally, in 0073, Venable specifically states that "rectangular figures will be treated", thus meeting this recited limitation. Since only the primary reference is used, no separate motivation or combination is required. The motivation and combination of the rejection for the parent claim is herein incorporated by reference.)

As to claims 5, 14, 23, 32, 41, and 50,

The image processing apparatus as defined in claim 4, wherein the overlay detector is configured to perform the overlay detection by each run when the overlay detection means detects an overlay of the run aggregate figures.

(Reference Venable teaches the use of rectangles to detect overlap, as shown in Fig. 14. Further, Venable teaches the use of bounding rectangles to enclose other polygons in Fig. 13 and 0088, which would *prima facie* enclose text and similar and

teaches processing of rectangular figures in 0073, and further states that the methods can be applied to polygons having any other shape, including circular or elliptical ones, which would most certainly encompass the "run aggregate figures" of applicant. The "run aggregate figures" shown in applicant's Figs. 6A-6C would be equivalent to lines of text that are encapsulated by bounding boxes and then processed together. As such, any means for detected overlap of rectangular features would *prima facie* be effective for analyzing stacks of rectangular figures. The "means" recited by applicant would correspond to the rectangular overlap detection method shown in Venable Fig. 14 (comparable to applicant's Figs. 5A-5C, for example). Since only the primary reference is used, no separate motivation or combination is required. The motivation and combination of the rejection for the parent claim is herein incorporated by reference.)

As to claims 6, 15, 24, 33, 42, and 51,

The image processing apparatus as defined in claim 4, wherein when the overlay detector is configured to detect an overly of the run aggregate figures, the overlay detecting means is configured to generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting means detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, to determine the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

[The overlay detector would *prima facie* be capable of detecting overlap between the "run aggregate figures," regardless if it were so configured according to applicant's

specification (see 112 1st objection above).] Reference Venable teaches the use of rectangles to detect overlap, as shown in Fig. 14. Further, Venable teaches the use of bounding rectangles to enclose other polygons in Fig. 13 and 0088, which would *prima facie* enclose text and similar and teaches processing of rectangular figures in 0073, and further states that the methods can be applied to polygons having any other shape, including circular or elliptical ones, which would most certainly encompass the "run aggregate figures" of applicant. The "run aggregate figures" shown in applicant's Figs. 6A-6C would be equivalent to lines of text that are encapsulated by bounding boxes and then processed together. As such, any means for detected overlap of rectangular features would *prima facie* be effective for analyzing stacks of rectangular figures. The "means" recited by applicant would correspond to the rectangular overlap detection method shown in Venable Fig. 14 (comparable to applicant's Figs. 5A-5C, for example). Since only the primary reference is used, no separate motivation or combination is required. The motivation and combination of the rejection for the parent claim is herein incorporated by reference.

As to claims 7, 16, 25, 34, 43, and 52,

The image processing apparatus as defined in claim 6, wherein the overlay detector is configured to determine whether, for the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle, to perform the overlay detection by each run.

Reference Venable does not explicitly teach the configurability of the overlap detection means to choose whether or not to perform overlay detection. It would be

obvious to one of ordinary skill in the art to check whether a rectangle or primitive element overlapped before performing the actual overlap detection on two specific polygons or rectangles. Reference Duluk teaches the inclusion of dynamic microcode with data instructions for rendering processing, which would allow for the configurability of elements within the graphics engine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the overlap detection of Venable with the rendering of Duluk, since the techniques of Duluk (3:10-16, 5:39-60, 6:30-65, as applied to OpenGL standard, which handles both 2D and 3D applications – see Venable 0005 where it is taught that images are rasterized for rendering processing and Duluk 1:18-50 as well) are taught to speed up conventional rendering processes like those used in Venable.

As to claims 8, 17, 26, 35, 44, and 53,

The image processing apparatus as defined in claim 1, wherein the second output image is configured to be overwritten on the third output image.

Venable teaches in 0015-0018 very clearly that the first two images are input and the third image is output with the 'specified region' removed. Further, it is well known in the art to store the results of image processing in some kind of memory before they are output. Reference Venable teaches in 0063 that images are stored in a frame buffer, so it would be *prima facie* obvious to store the third image there. It would be obvious to one of ordinary skill in the art to allow the second image to be overwritten (e.g. if as in the case of Fig. 3, the second image were of background against which an object was placed and it was desired to only capture the object and then combine it with the first

image). Reference Duluk teaches the inclusion of dynamic microcode with data instructions for rendering processing, which would allow for the configurability of image elements within the graphics engine, particularly to set one as translucent. Duluk teaches a test for transparency in 8:55-67, which could be applied to set overwriting of a particular image or polygon. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the overlap detection of Venable with the rendering of Duluk, since the techniques of Duluk (3:10-16, 5:39-60, 6:30-65, as applied to OpenGL standard, which handles both 2D and 3D applications – see Venable 0005 where it is taught that images are rasterized for rendering processing and Duluk 1:18-50 as well) are taught to speed up conventional rendering processes like those used in Venable.

As to claims 9, 18, 27, 36, 45, and 54,

The image processing apparatus as claimed in claim 8, wherein the first and second output image are configured to be drawn with a rendering process based on at least one of a mono chrome, an RGB video color rendering, and a CMYK paint color rendering.

Venable teaches the use of RGB and similar color spaces (0065). Other color spaces (e.g. CMY, YUV, CMYK) are well known in the art and would be obvious to use. Color printers are known in the art – e.g. it is well known, a fundamental principle in the art – to use CMYK color space. The use of a monochrome color space would be *prima facie* obvious that a copying system (0060, Figs. 1 and 2) is being used, and it is common sense that hard copy (0058) would be black and white (e.g. a book). No

separate motivation or combination is required, and that of the rejection of the parent claim is hereby incorporated by reference.

Claims 2, 11, 20, 29, 38, and 47 are rejected under 35 U.S.C. 103(a) as unpatentable over Venable in view of Duluk as applied to claim 1 [and 10, 19, 28, 37, and 46] above, and further in view of McIntosh (McIntosh, John M. "POSTSCRIPT: A Page Description Language.")

As to claims 2, 11, 20, 29, 38, and 47,

The image processing apparatus as defined in claim 1, wherein said graphic rendering instructions are configured to be a page description language and each of said graphic rendering instructions are configured to include a fundamental graphic description instruction which handles characters, graphics and images and a rendering attribute instruction handling colors, clipping area designations and rendering arithmetic methods.

31. Venable teaches the use of a page description language (PDL) in 0062, but does not teach specifics of the instructions. Reference McIntosh teaches that by definition, a PDL is a programming language that defines images and text in a high-level format; an example of a PDL is Adobe® Postscript™, which includes its own instructions to handle colors, characters, graphics images, etc (pg. 3). Therefore, the recitation of a PDL limitation by applicant *prima facie* includes "fundamental graphic description instructions" that handle all the various aspects of rendering that are required and includes color (pg. 1). Basically, a PDL includes all the information that applicant recites, and it would be obvious to one of ordinary skill in the art to have a split

instruction – e.g. one that that handles rendering and one that does graphical description. Reference Duluk teaches the use of clipping as discussed above (3:45-67), and *prima facie* Postscript handles such operations as well. Further, Duluk teaches the use of dual-based instructions, e.g. a vertex or fragment, and dynamic microcode to accompany it through the pipeline (the primitive, and pipeline state data) that would fulfill this requirement (see claim 1 rejection for references). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the PDL and rendering of Venable and Duluk with the PDL of McIntosh, since McIntosh teaches the details of the PDL that Venable clearly states can be the output of the processing (0062).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 6,646,655 B1 to Brandt, US PGPub 2002/0178183 A1 to Meding, US 2002/0154128 A1 to Zachmann, US 6,377,279 B1 to Miura, US 5,572,634 to Duluk, Jr., and US 6,704,456 B1 to Venable (if applicant questions date of Venable PGPub reference, it is a granted patent as well, and eligible under 102(e) as prior art, with no common assignees or inventive entities).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V Woods whose telephone number is 703-305-0263. The examiner can normally be reached on M-F 7:30-5:00 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

November 17, 2004

JEFFERY BRIER
PRIMARY EXAMINER